REMARKS

The following remarks are submitted to address the issues raised in the Office action mailed May 8, 2002. Claims 1-6, 9-19, 21-25, 27 and 28 are pending in the application. Claims 1-6, 9-19, 21-25, 27 and 28 stand rejected under 35 USC §103(a) as being unpatentable over Herzog et al. (U.S. Patent No. 4,669,903) in view of Wang (U.S. Patent No. 5,334,976) and Christopher et al. (U.S. Patent No, 4,075,679).

The drawings stand objected to under 37 C.F.R. §1.83(a) as not showing every feature of the invention specified in the claims.

Applicant respectfully requests consideration of the application in view of the foregoing amendments and the following remarks.

Claims 1-6, 9-19, 21-25, 27 and 28 -- 35 U.S.C. § 103(a)

The rejection to claims 1-6, 9-19, 21-25, 27 and 28 under 35 U.S.C. §103(a) as being unpatentable over Herzog et al. (U.S. Patent No. 4,669,903) in view of Wang (U.S. Patent No. 5,334,976) and Christopher et al. (U.S. Patent No, 4,075,679) is respectfully traversed.

Herzog et al. relates to a keyboard using a diagonal key spacing configuration which provides proper bio-mechanical alignment from the elbow to the fingertips. The keyboard is divided into two sectors, a left hand sector and a right hand sector. The keys in each sector are set on a diagonal, however the vertical and horizontal key spacing are not disclosed. Thus, the keys are not configured in the "standard" staggered layout of a conventional keyboard. One of the advantages of the present invention is its use as a tool for teaching children to touch type when their hands are small. This advantage would be lost if the relative position of the keys were changed from the staggered layout to a diagonal layout.

Additionally, Herzog et al. does not disclose keystroke travel range, which in the present invention has also be ergonomically designed to suit the needs of users with smaller than average hands. Further, Herzog et al. fails to recognize the seminal problem addressed by the present

invention. Specifically, the ergonomic problems faced by children or small-handed adults who wish to touch type. Herzog et al. does not suggest smaller keys, smaller key spacing or a reduced keystroke travel range to accommodate these users.

Wang fails to cure the deficiencies of Herzog et al. as a reference. Wang relates to a keyboard with stylus-actuated keys comprising the majority of the keyboard, with a limited number of finger actuated keys on the periphery. Some of the key-sizes and spacing on the Wang keyboard are smaller than on an average keyboard, however, these reductions in size are dependant on whether the key is a finger-actuated key or a stylus-actuated key. The small alphabetical keys are not meant to be typed upon by a user's finger. Rather, a special stylus is provided to allow a user to actuate these keys. Thus, Wang is directed toward a substantially different input means than the present invention. Furthermore, nowhere in Wang is there recognition of the problem solved by the present invention, namely, the difficulty that children and users with small hands have with a "standard" sized keyboard. Wang fails to appreciate the need for the presently claimed combinations of smaller than normal dimensions on a solely finger actuated keyboard.

Christopher et al. discloses a keyboard with a full range of alphanumeric keys arranged in a QWERTY layout as well as a number pad and function keys. The keyboard is provided as an input unit for a programmable calculator. There is no mention of the dimensions of the keyboard or the keys. Nor is there discussion of the keystroke travel range. As with the prior two references, Christopher et al. fails to recognize the needs of children and users with smaller than average hands that wish to touch type. In fact, Christopher most closely resembles a standard keyboard, which is precisely the problem that the present invention was conceived to overcome. Thus Christopher et al. fails as a reference either alone or in combination with Herzog et al. and Wang.

Furthermore, there is no suggestion in any of the three references that they be combined. According to MPEP §2142, "[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure." Applicant submits that there is no suggestion or motivation in Herzog et

al., Wang, or Christopher et al. to modify or combine the teachings of these references to achieve the particularly proportioned, ergonomically designed, keyboard for use by children and adults with smaller than average hands, as in the present invention.

With respect to claim 1, 21, 22 and 27, applicants disagree with the Examiner that the selection of a desired keystroke travel range is an obvious matter of design choice. The selection of the keystroke travel range is intricately connected with the overall design and function of the keyboard. It is also been developed with the ergonomic needs of children and adults with smaller than average hands in mind. This is one aspect of the invention which as a whole addresses a problem which prior to the present invention, had not been solved. As such, it is not an obvious matter of design choice and the Examiner is respectfully requested to withdraw the rejection.

Claims 6, 14, 18, and 25 are all dependant upon claim 1. As demonstrated above, Wang and Christopher fail to account for the deficiencies of Herzog et al. as a reference. Thus, because independent claim 1 is believed to be non-obvious, so are the claims dependant on claim 1.

For all of the foregoing reasons claims 1-6, 9-19, 21-25, 27 and 28 are not unpatentable Over Herzog et al. in view of Wang and Christopher et al., and the Examiner is respectfully requested to withdraw the rejection.

Objection to the Drawings under 37 C.F.R. 1.83(a)

The objection of the drawings under 37 C.F.R. §1.83(a) as failing to show every feature of the invention specified in the claims is believed to be rendered moot by the submission of Figure 3 submitted herewith. This figure shows one embodiment of the present invention with all of the recited individual key possibilities. For this reason the Examiner is respectfully requested to withdraw the objection to the drawings.

Applicant respectfully disagrees with the Examiner's contention that the patent to Layeyre (U.S. Patent No. 4,324,976) has obvious similarities to the claimed structure.

Conclusion

All alleged bases for rejection have been properly traversed or rendered moot in view of the foregoing amendment sand remarks. Accordingly, Applicant respectfully requests that all outstanding rejections be withdrawn, and that the application be allowed. A favorable Office Action is respectfully solicited.

In accordance with 37 C.F.R. §1.121(b)(1)(iii), a marked up version does not have to be supplied for an added or deleted paragraph.

The Examiner is invited to contact the undersigned at (336) 607-7315 to discuss any matter relating to the present application.

Respectfully submitted,

Date 8/8/02

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Version with Markings to Show Changes Made

Amendments in the Specification:

In accordance with 37 C.F.R. §1.121(b), the following replacement paragraphs show all the changes made by the foregoing amendments relative to the previous version of the paragraphs, with additions underlined and deletions [bracketed].

On page 8, line 31, please insert the following:

Fig. 3 shows an embodiment of a layout for a fixed key input apparatus of the present invention.

In the Drawings:

Please add Figure 3 submitted herewith.

Amendments in the Claims:

In accordance with 37 C.F.R. 1.121(c), the following replacement paragraphs show all the changes made by the foregoing amendments relative to the previous version of the paragraphs, with additions underlined and deletions [bracketed].

No amendments to the claims were made through this amendment.